

Name_____

Chemistry I: Gas Law Problems

Period_____ Date_____

Combined Gas Law Problems **1**

SHOW ALL WORK for credit!!

1. A gas occupies 12.3 liters at a pressure of 40.0 mmHg. If the temperature remains constant, what is the new volume when the pressure is increased to 60.0 mmHg?
2. If a gas at 25.0 °C occupies 3.60 liters at a pressure of 1.00 atm, what will be its volume at a pressure of 50 atm and the temperature remains the same?
3. To what pressure must a gas that occupies 400.0 cu. ft. at standard pressure be compressed to fit into a 3.00 cubic foot tank? The temperature remains the same.
4. A gas occupies 1.56 L at 1.00 atm. What will be the volume of this gas if the pressure becomes 3.0 atm with the temperature remaining the same?
5. A gas occupies 11.2 liters at 0.860 atm. With the temperature constant, what is the pressure if the volume becomes 15.0 L?
6. 500.0 mL of a gas is collected at 745.0 mmHg. What will the volume be at standard pressure? $T_1 = T_2$ are equal.

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7. Convert 350.0 mL at 740.0 mm of Hg to its new volume at standard pressure with the temperature constant.

8. Convert 3.38 L at 63.0 atm to its new volume at standard pressure with the temperature constant.

9. Convert 273.15 mL at 166.0 mm of Hg to its new volume at standard pressure with the temperature constant.

10. Convert 77.0 L at 18.0 mm of Hg to its new volume at standard pressure with the temperature constant.

11. Calculate the decrease in temperature (in Kelvin) when 2.00 L at 20.0 °C is compressed to 1.00 L with pressure remaining the same.

12. A gas occupies 900.0 mL at a temperature of 27.0 °C. Under constant pressure, what is the volume at 132.0 °C?